

**Blue Ribbon Commission on Transportation**

**DRAFT**

**REVISED**

**Investment Strategies Committee**

**Interim Report**

**May 11, 2000**

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Committee membership as of May, 2000 is as follows:

Dale Stedman  
Chair  
Washington Good Roads Association

Bruce Anderson  
Supervalu, Inc.

Ted Bottiger  
Washington Public Ports Association

Don Briscoe  
International Federation of Professional and Technical Engineers

Honorable Shirley Hankins  
Washington State House of Representatives

Honorable Mary Margaret Haugen  
Chair, Transportation Committee, Washington State Senate

Peter Hurley  
Transportation Choices

Honorable Bettie Ingham  
Yakima County Commission

Andrew Johnsen  
Governor's Executive Policy Office

John Kelly  
Alaska Airlines

Bill Lampson  
Lampson International

Charles Mott  
Innovac

Patricia Otley  
Burlington Northern Santa Fe Railway

**Former members**

Art Jackson, The Bon Marché  
Jennifer Joly, Governor's Executive Policy Office  
Honorable Maryann Mitchell, Washington State House of Representatives

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**INVESTMENT STRATEGIES COMMITTEE**

**INTERIM REPORT**

**DRAFT (5/11/2000)**

## INTRODUCTION

The Investment Strategies Committee of the Blue Ribbon Commission on Transportation began meeting in October 1998. The Committee consists of 13 members from business, government and labor and is chaired by Dale Stedman from the Washington Good Roads Association.

### Charter

As its first order of business, the committee confirmed its charter which was finalized as follows:

- Understand existing and emerging statewide transportation needs
- Recommend critical state, regional, and local transportation investments to be achieved within 20 years
- Review, evaluate, and recommend state, regional, and local planning and programming practices applicable to transportation investments
- Identify, evaluate, and recommend strategies that encourage more efficient use of transportation facilities as well as strategies that add new capacity
- Propose a method for recognizing and mitigating interjurisdictional impacts of transportation improvements

The committee is following the commission's timetable of issuing 'findings' – each committee's statements about the transportation area they were studying – by September 1999, issuing proposed 'options' of committee recommendations in May 2000, and issuing final recommendations of the Commission in November 2000.

## I. COMMITTEE ISSUE IDENTIFICATION

### a. Committee Presentations

From its initial October 1998 meeting through May 2000 the committee heard numerous presentations from transportation interests plus another ten staff presentations. Presenters and the topics they covered were as follows:

<b>Presenter</b>	<b>Agency</b>	<b>Topic</b>
Greg Selstead Daniela Bremmer	WSDOT	Process to update WSDOT's 20-year transportation plan (WTP)
Charlie Howard	WSDOT	Congestion: causes and trends; WTP update; Preservation of WA roads
Sam Seskin	Parsons, Brinckerhoff, Quade and Douglas – Portland, OR office	Relationship between land use and transportation
Paula Hammond	WSDOT	WSDOT operated roads network
Chris Mudgett	County Road Administration Board	County road network
Diane Carlson	Association of Washington Cities	City street network
Tom Phillips	Community Planning and Research	Homeowner preferences
G.B.Arrington	Tri-Met, Portland, OR	Linking transportation and land use
Mary McCumber	Puget Sound Regional Council (PSRC)	GMA and Vision 2020
Peter Beaulieu	PSRC	Freight and economic development
Paul Chilcote	Port of Tacoma	Freight mobility
Jim Toomey	Port of Pasco	Economic development
Rick Walsh	King County METRO	Transit
Jeff Hamm	Jefferson Transit	Transit
Mark Hallenbeck	University of Washington, Washington State Transportation Center	HOV system performance
Rob Fellows	WSDOT	HOV system
Mike Hoover	State Senate Republican Caucus	HOV system

Chris Endresen	PSRC	HOV system
Ken Kirkland	WSDOT	Maintenance of WSDOT road network
Dave Parkinson	Puget Sound and Pacific Railroad	Short line railroads
Steve Anderson Jim Slakey	WSDOT	Passenger and freight rail operations in Washington
Terry McCarthy	WSDOT	Washington State Ferries
Bryan Lagerberg Ted Horobiowski Neil Peterson	WSDOT Avista Utilities Transportation Solutions	Commute trip reduction
Karen Schmidt	Freight Mobility Strategic Investment Board	Freight mobility

## b. Issue Papers

As the committee heard presentations through the first months, committee staff prepared researched ‘issue papers’ as background for the committee ‘findings’ to be adopted by the committee in September 1999. Issue papers covered the following topics in detail:

- Needs Exceed Funding
- Traffic Congestion in Washington
- Maintaining Washington’s Roads
- Land Use and Transportation
- Economic Development and Transportation

The issue papers followed a format of stating the problem followed by a listing of the proposed solutions. Each paper discussed the issues in detail and evaluated the proposed solutions against the committee’s evaluation criteria (see Section III, committee Options, below). Issue papers were distributed to committee members for their use, and placed on the commission’s web page for the information of the public. The commission’s website can be found at [www.brct.wa.gov](http://www.brct.wa.gov)

## c. Trends

The committee discussed and the research confirmed a number of trends in transportation that the committee viewed as critical. Among those trends cited are the following:

**Population:** the 1999 population of Washington state, according to the state’s Office of Financial Management’s forecasting division was 5,759,756. The forecasted population in 2020 is 7,498,446, a projected increase of 30% over the next 20 years.

In the four-county Puget Sound region alone (King, Kitsap, Pierce, and Snohomish counties), the 1990 population was 2.7 million. It is forecasted to grow to 4.1 million by

2020, an increase of 50%. Likewise, Clark County is forecasted to grow by 79% from 1990 to 2017 and Spokane County by 52% by 2020.

**Employment:** According to WSDOT's Trends Report, employment in Washington will climb from 2.6 million jobs in 1995 to a forecasted 3.7 million jobs in 2020 – an increase of 1.1 million more jobs.

**The Transportation Economy:** Government spends over \$3 billion annually providing roads, ferries, transit services and port facilities; households and businesses spend another \$11 billion annually. In total, transportation spending represents about 10% of the total economic activity in the state. The roads, streets, bridges and highways alone represent assets worth over \$100 billion in Washington.

**Trade Growth:** According WSDOT and the Washington Public Ports Association, grain exports from Washington ports are projected to growth 50% by 2020. Containerized cargo shipping is projected to double by 2020.

**Congestion Index:** Research shows that Washingtonians spend more than 100 million hours each year “stuck in traffic.” The Texas Transportation Institute's Congestion Index (based on volume to capacity ratio, the index is the best measure applied consistently across metropolitan areas in the country), ranked the Seattle-Everett area the sixth most congested urban area in the country in 1996. In 1999, the Seattle-Everett area rose to the second most congested area.

**Vehicle Miles Traveled (VMT's):** As reported by WSDOT, the annual VMTs in 1997 in Washington was 50 billion miles. Projected VMTs in 2020 is 76 billion miles, an increase of 52%.

**Centerline miles:** While state highways experience the bulk of VMTs (57% VMTs on state highways, 18% on county roads, and 25% on city streets), and the majority of expenditures (48% expenditures on state highways, to 26% on county roads and 25% on city streets), the majority of lanes miles in Washington are under the jurisdiction of the counties (65%) and the cities (21%). The state has but 14% of the lane miles in the state.

**Passenger Rail (Amtrak) ridership:** According to WSDOT, 1999 Amtrak ridership in Washington was 565,000 passengers. The 2018 ridership projection is 2 million passengers, an increase of 254%.

**Transit ridership:** The state's 26 transit systems' ridership projections, including Sound Transit's bus ridership projections, only go to 2006. For the 1998-2006 timeframe, bus transit vehicle miles traveled, for fixed route services, all the transit systems are projected to increase by 19% (95 million to 113 million miles); passenger trips are projected to increase 13% (151 million to 170 million).

**Ferry ridership:** According to WSDOT, 1999 state ferry ridership is 26 million passengers. Projected state ferry ridership in 2015, the last year for which projections are available, is 41 million passengers, an increase of 58%.

## II. COMMITTEE FINDINGS

By August 1999, the committee had applied its research and knowledge into a set of agreed upon findings that have been distributed and are available on the Commission's website. The findings closely follow the issue paper research and are organized as follows:

- **Needs Exceed Funding** – the committee listed four findings
- **Congestion** – the committee listed six findings
- **Maintenance and Preservation of Transportation Facilities** – the committee listed five findings
- **Using Transportation Investments to Promote Economic Development** - the committee listed four findings
- **Land Use and Transportation** – the committee listed five findings

The committee's 24 Findings are addressed – some multiple times – with the exception of three of the four Economic Development findings. The addressed Economic Development finding deals with the threat congestion poses to moving freight rail through urban areas. The Economic Development findings not addressed deal with the impacts of breaching the four dams on the Snake River, a finding that all parts of the state have not shared equally in economic growth, and a finding that it is better to focus on transportation benefits rather than using transportation as an economic development tool.

The committee also contributed to the Transportation Trends and Overview Findings. Included in the overview are committee findings discussing trends and their effects on transportation (Finding #2) safety and the rates of traffic fatalities in Washington (Finding #4) and the relationship of the transportation economy to the overall state economy (Finding #5).

### III. COMMITTEE OPTIONS

Beginning in the fall of 1999, the committee began the task of developing options for consideration by the full commission in May 2000 and by the public over the summer and fall.

There were a number of different ideas about what the options should be: a list of policy recommendations with some specifics; the steps needed to accomplish an improved transportation system, what the cost will be, and how the outcome will improve the system and reduce congestion; a focus on the definitive and specific rather than more general recommendations; a document that explains what investment strategies will be used and what specific results will occur; a vision that will excite people.

This document tends toward the policy options – although some of the changes suggested are what amounts to a “sea change” in transportation investment policy in this state. The committee and the public are reminded these are options only; the specifics are evolving through more input from the public and stakeholders, and throughout the summer and fall of this year more specific and tangible recommendations, at least in the most heavily congested areas of the state, are likely to emerge.

Early on, the committee established evaluation criteria against which they would measure their eventual options and recommendations. The evaluation criteria are as follows:

- fix the most critical problems first
- be cost-effective
- produce measurable change
- be acceptable to the public
- be administratively feasible
- maintain or enhance safety

#### Summary of Options

To assist the committee in its deliberations, the charter was separated into two broad themes under which the options are organized, ‘More Efficient Use of Transportation Facilities’, and ‘20- Year Investments.’

There are seven options under More Efficient Use (listed as Group A) and eight options under 20- Year Investments (listed as Group B). They are organized as follows: state the option, a brief summary discussion of the option, and arguments pro and con. The Findings upon which the options are based are noted in footnotes following the pro and con arguments. A few options appear under both categories – the regional approach, Traffic System Management and Intelligent Transportation Systems, and Traffic Demand Management - because they are part of the framework of options that are germane to both themes.



The More Efficient Use options are as follows:

- A1** A regional approach to planning, investing, decision-making as a more efficient use of the system;
- A2** Preservation and maintenance is the top priority;
- A3** Benefit-cost analysis as an investment aid to jurisdictions and modes;
- A4** Reduce highway wear and tear through higher pavement standards and banning studded tires;
- A5** A model ordinance for utility cuts;
- A6** Use Transportation System Management techniques and Intelligent Transportation Systems
- A7** Use Traffic Demand Management techniques.

The 20-Year Investment options are as follows:

- B1** Take a new regional approach to investing;
- B2** Use a corridor approach to invest in the most effective mix of strategies in the most-heavily traveled corridors;
- B3** Transportation investment equity is achievable through regional investing;
- B4** Strengthen the link between transportation investments and land use planning;
- B5** Invest in Transportation System Management techniques and Intelligent Transportation Systems
- B6** Invest in Traffic Demand Management;
- B7** Invest in congestion pricing in congested urban areas;
- B8** Invest in human resources needed to sustain the transportation system.

## Overarching Strategies

A summary of the options reveals a number of overarching themes, or investment strategies, the committee has been discussing for many months. Those strategies appear to be the following:

- Use the system more efficiently: give greater decision-making authority and revenue authority to regions; take better care of the existing transportation infrastructure by making preservation and maintenance the top priority; do better on determining the most cost-effective investments; insist on higher pavement standards, a ban on pavement-wearing studded tires, and manage utility cuts more wisely. Do a better job of reducing demand for capacity through traffic demand management (TDM) strategies; use Intelligent Transportation System technology to increase efficiency.

- Follow an investment vision that looks to the most effective mix of multmodal investments in the most-heavily traveled transportation corridors; invest in the most highly-congested corridors first, tackling the worst bottlenecks and congested areas in those corridors; allow the regions, together with the state, to make the best investment decisions for their region, including raising funds and spending those funds flexibly on transportation projects in their region; reduce demand for capacity through TDM and aggressive land use policies that will lead congested areas toward a smarter growth pattern; invest in Intelligent Transportation Systems technology; let the regions decide if congestion pricing is right for their areas; invest in human resources necessary to sustain the transportation system.

## OPTIONS FOR MORE EFFICIENT USE OF TRANSPORTATION FACILITIES

Option A1: There should be better coordination of transportation planning, funding, investments, and decision-making in all jurisdictions. To accomplish this, a new regional approach to transportation planning, funding, investment, and decision-making should be implemented.

Characteristics of a successful regional system include the following:

- availability of block granting state funds,
- regional ability to seek ballot approval on significant revenue decisions within the regions,
- focus on corridors, and integration with land use planning. 1

### Summary of Discussion

The committee extensively discussed the idea of regionalizing some transportation spending in the context of using the transportation system more efficiently. While land use and transportation coordination is one area where a more regional approach would benefit transportation decision-making, the committee discussed regionalizing some state mobility funds, as is done in California, so regions could more directly align mobility funding with their needs (a number of other communities – Atlanta, Georgia, and Vancouver, British Columbia, to name two, have instituted regional models). A second element of regionalization would grant regions some transportation revenue authority so that funding raised in the regions would be spent exclusively on transportation investments to benefit the region.

To illustrate, the California model can be summarized as follows: CalTrans (California DOT) controls statewide bridge rehabilitation, pavement preservation funding, and safety funding. Congestion relief funding is split 75 / 25 - 75% to the regions and 25% for CalTrans. The regional money is multimodal, so it can be used for highway, transit, rail, and ferry investments. The 25% for CalTrans is for “highways of statewide significance” congestion relief improvements. The regional funding can be augmented by a local option sales tax for transportation improvements.

### Arguments in Favor

Regionalizing some transportation spending will result in more efficient use of the transportation system by creating better coordination between planning and funding transportation investments in regions. Regional revenue authority permits each region to invest some transportation funding directly approved by voters in the region.

## Arguments Against

Regionalizing some transportation spending will result in ‘balkanization’ of the state transportation system. Transportation investments should be made by the state, and each area of the state should receive some funding to keep the system whole. Regional transportation revenue authority will result in greater disparity of tax burdens throughout the state.

## Relationship to Findings

<sup>1</sup> This option relates to Finding #33: Other large metropolitan areas have created regional governments designed to better coordinate and enforce land use and transportation plans.

Option A2: All jurisdictions should make preservation and maintenance of the existing transportation infrastructure the top priority. All existing transportation modes should be maintained at least at a minimum standard throughout the system. All jurisdictions should invest in transportation safety as a priority.

Pavement management systems should be used by all jurisdictions to maintain and preserve roadways most effectively. Pavement management systems include the lowest life cycle cost method for pavement repairs.

A uniform transportation data collection system for all jurisdictions should be instituted. Components of this system should include traffic data, pavement condition data, and bridge condition data. <sup>2</sup>

## Summary of Discussion

This option states that the maintenance and preservation of the existing \$100 billion transportation infrastructure in Washington should be the top investment priority, now and in the future.

Through presentations and issue paper research, it became clear that the state highway system is maintained to a fairly high standard, but that many bridges, and especially county roads and city streets are not. The committee learned that maintenance and preservation is funded first at the state level – usually to a level B – but that local government transportation departments compete for maintenance and preservation funding with all other general fund expenditures.

The committee learned that maintenance (and operations) are defined as day-to-day activities that keep the system clean and operating in a condition as near as possible to its “as built” condition. Maintenance activities are focused on the infrastructure such as signal systems, guardrail repair, and patching potholes. Operations activities provide a direct service such as plowing snow, cleaning rest areas, and trimming vegetation. In other modes, examples include operating ferry boats and passenger rail train subsidies.

Preservation of transportation facilities is defined as capital investments to preserve the structural integrity of the system. Examples would be re-paving the lanes to restore load carrying capacity, rehabilitating bridge decks, bridge seismic retrofit and rehabilitating ferry vessels and terminals.

This option is consistent with options from the Revenue Committee, which suggests a baseline allocation for maintenance and preservation for all transportation modes throughout the state.

The state, counties, and most of the larger cities in the state use pavement management systems (PMS). A PMS is a computerized tracking system that catalogs road segments and keeps records of pavement types, conditions, and characteristics in order to determine the optimal maintenance for each road. Included in a PMS is the lowest lifecycle cost method of preservation. This method looks at the cost per lane mile for repair and compares them with the rehabilitation schedule for actual lane miles. By matching up the annual cost of maintenance with the rehabilitation cycle, it is possible to locate the year with the lowest cost to rehabilitate a roadway.

Presently, much data is collected throughout the system, but it is often in differing forms, especially in smaller jurisdictions. A uniform data collection system would ensure a uniform base of data, which would increase the productivity of planners and engineers.

### Arguments in Favor

Taking care of the \$100 billion transportation infrastructure in Washington should be the first funding priority throughout the system. Pavement management systems and a uniform data collection system are efficiency tools that will save money and preserve the transportation system.

### Arguments Against

Road building and capacity improvements are a higher priority and should be funded first. The state system is maintained adequately now.

### Relationship to Findings

2 This option relates to the following findings:

Finding #4: Despite a 75% increase in vehicle miles traveled in the last twenty years within Washington, annual traffic *fatalities* have dropped by 23%. Annual traffic *injuries* have increased 26% in the last twenty years, but have grown at only one third the rate of increase in vehicle miles traveled. While the risk of accidents while driving has fallen, the losses due to accidents remain substantial.

Finding #6 – The roads, streets, bridges, and highways in Washington represent public assets worth over \$100 billion that require regular maintenance and rehabilitation to provide cost-effective transportation services.

Finding #18: Currently, while most state highways are generally in good condition, many bridges, urban arterials, county roads, and city streets are not.

Finding #19: Pavement management systems and road maintenance that focus on lowest life cycle costs can save money for governments and road users.

Finding #22: The other elements of Washington's public transportation system such as ferries, waterways, ports, bus and rail transit also require adequate maintenance.

Option A3: Benefit –cost analysis should be used as an aid in selecting the most effective transportation investments. <sup>3</sup>

### Summary of Discussion

Benefit – cost analysis is the general term policy analysts use to refer to a logical framework and the specific techniques for measuring and comparing all the significant benefits and costs of a public policy.

The state uses benefit – cost (B/C) analysis to prioritize state highway projects. The B/C in the state formula is the project benefits (reduced to a monetary value) divided by the project costs. Monetary benefits and costs projected over a 20-year period are converted into present value (today's dollars) using a discount rate of 4 percent.

In the state's formula, the benefit categories consist of travel time savings for passenger and freight movements, user operating savings, and accident reduction.

The cost categories consist of construction, environmental retrofit, preliminary engineering, and annual operation and maintenance.

The state analysis also weighs community support, environmental issues (wetlands assessment, noise assessment, and water quality), mode integration, and land use to determine the highest priority highway projects.

While benefit-cost analysis is used for road projects, the research shows that there is no agreed upon analytic approach to dividing transportation resources among the modes: for example, no analysis exists to determine the highest priority between a road project in King County and a transit project in Clark County. This analysis would be helpful and is work for the future.

For now, more widespread use of benefit – cost analysis by transportation planners in all modes should help in sifting the most pressing priorities from the huge "needs lists" now prevalent throughout the transportation system. In the most congested areas, B/C would be an element for consideration in the most effective mix of strategies.

### Arguments in Favor

Benefit – cost analysis should aid in the more efficient use of limited transportation funding in all modes. While an analytical approach to determining the most cost effective investments among the modes does not exist presently, benefit – cost analysis should assist decision-makers by providing a standard to identify the best investments in each mode.

### Arguments Against

Benefit – cost analysis is limited and doesn't always identify the most cost effective investments. It can assist in deciding on investments within modes (e.g., a road project

versus another road project), but there is no analysis for intermodal tradeoffs. Therefore, it doesn't identify the most effective mix of transportation investments. It can be expensive and many local jurisdictions would view this option as an unfunded mandate.

### Relationship to Findings

3 This option relates to the following findings:

Finding #9: Current estimates of transportation needs/requests are subjective and not consistent across jurisdictions.

Finding #10: State and local governments do not use all of the best tools available for identifying the most cost-effective investments.

Option A4: Wear and tear to highways should be reduced through higher pavement standards where it is cost-effective.  
A studded tire ban should be phased in. 4

### Summary of Discussion

Generally, there are four types of pavement used for roads in Washington: Portland cement concrete, asphalt concrete, bituminous surface treatment, and a new pavement type called Superpave. Portland cement is the most expensive – a rough estimate is \$1 million per lane mile – and is used primarily on the interstate system. Most of the state and local systems, however, use asphalt concrete or bituminous surface treatment that have half the life or less than Portland cement. Superpave is a new pavement type that is expected to extend pavement life and reduce maintenance and preservation costs.

The key to well-maintained roads is investing in durable pavements and minimizing damage caused by drivers.

The Washington State Legislature has had a long and difficult debate over the use of studded tires. In 1999, Washington banned the use of older type studded tires in favor of lightweight studs, that are estimated to reduce road wear by only 15 percent. Neighboring Idaho and Oregon require use of lightweight studs.

Twenty-four states allow studded tire use for at least part of the year while other states, most notably snowy climate states Michigan and Minnesota, have banned studded tires since 1974 and 1972 respectively. Both states banned studded tires due to pavement wear. Studies indicate that the accident rate in Michigan and Minnesota compared favorably after the ban went into effect. Neither state has moved to reintroduce studded tires.

This option suggests that despite the best efforts of the legislature, a studded tire ban, in favor of all-season radial tires or other, newer technology should be phased in over time. The reduction to roadway wear and tear (studies indicate that over the course of its 30,000 mile useful life, a typical - not lightweight - studded tire will remove between one-half and three-quarter tons of asphalt cement mix from the roadway) should extend roadway life, and dramatically decrease roadway maintenance and preservation costs. (studies indicate the cost of material roadway replacement is at least \$8 to \$15 per

studded tire, and if the pavement adjacent to the rutted lane is also replaced, replacement costs can soar to \$40 to \$50 per studded tire).

### Arguments in Favor

Higher pavement standards, especially in high-volume areas, and a phased-in ban of studded tires should dramatically reduce the wear and tear on roadways and result in cost savings over the long term. Lightweight studded tires only marginally reduce roadway wear and tear. Studies in snowy climate states indicate that the accident rate does not rise after studded tires are banned.

### Arguments Against

Most jurisdictions cannot afford to build roadways to a higher pavement standard. Banning studded tires has been attempted and failed. The state has just recently passed a lightweight studded tire requirement, and it should be given time to work.

### Relationship to Findings

<sup>4</sup> This option relates to Finding #21: Heavy vehicles, studded tires, and weather contribute significantly to wear and tear on the roads.

### Option A5: A strict model ordinance for utility cuts on roads and streets to reduce pavement damage should be developed and used throughout the state.

Elements of the model ordinance include a “joint trenching” policy, an expedited permit process for joint trenching, a multi-year waiting period to re-cut the roadway for companies not willing to joint trench, and refraining from trenching during peak traffic hours. <sup>5</sup>

### Summary of Discussion

The committee determined that a more efficient use of the transportation system would include improved management of utility cuts on the roadway. Better management would reduce the frequency of traffic disruption and slow the deterioration of streets and roads. The best management practices in this area require a “joint trenching” policy. A “joint trenching” policy requires a jurisdiction – usually a city – to notify all possible utilities when a roadway cut for laying utility lines will occur so that all lines can be buried at one time. A “no-cut” period of years on that roadway then follows the excavation work, so that traffic disruption and roadway wear can be reduced to a minimum. Other ideas for a model ordinance include expediting permit processing for joint trenching, and refraining from cutting during peak traffic hours.

The identified problem in “joint trenching” is the new utility, or high technology company that locates in the area after the joint trenching and requests a roadway cut to bury cable lines. The “no-cut” period could cause the new company to look elsewhere to locate.



### Arguments in Favor

A “joint trenching” policy, made uniform throughout the state, should reduce the number of roadway utility excavations that disrupt traffic and add wear to the roadways. While some jurisdictions have adopted this policy, it should be a requirement statewide, or at least in congested urban areas.

### Arguments Against

Lower-density areas don’t need this policy, and in fact, such a policy could retard economic growth where it is most needed.

### Relationship to Findings

5 This option relates to Finding #20: Utility cuts on roads and streets contribute to premature wear and tear.

Option A6: To provide for a more efficient flow of traffic in congested areas, Traffic System Management (TSM) and Intelligent Transportation Systems (ITS) policies should be implemented where effective.

Policies should include the following:

- Traffic and incident management, such as freeway on-ramp metering, signalization improvement, intersection modification, priority treatment for HOV’s and/or transit vehicle, and
- Traveler information, including electronic signs, sharing of information by DOT, and transmission to the public through radio and television. 6

### Summary of Discussion

Intelligent Transportation Systems fall under the heading of Transportation System Management (TSM). TSM improvements are designed to add capacity without requiring major new infrastructure additions. TSM improvements now underway or slated for expansion at least in the Puget Sound region include:

- **intersection modifications:** traffic channelization at intersections; intersection widening; exclusive turn lanes and turn prohibition; centralized signal interconnect and coordination; railroad grade separation.
- **street/highway modifications/management:** continuous two-way left-turn lanes for undivided roads; reversible traffic lanes; entrance ramp metering; driver information through radio broadcast; incident response.
- **enhanced preservation:** retrofitting streets and arterials for transit and non-motorized travel opportunities at the time such facilities undergo maintenance and preservation.

- **priority treatment for transit vehicles:** special access to park-and-ride lots; ramp meter bypasses; exclusive transit vehicle access to HOV lanes; signal priority for buses on major arterials.
- **roving service patrols:** designed to move disabled vehicles from the highway quickly.

Intelligent Transportation Systems (ITS) use advanced technology to increase transportation system efficiency. ITS improvements include:

- Advanced Traffic Management Systems (ATMS) which allow local jurisdictions to exchange transportation information to improve traffic flow within corridors. The North Seattle ATMS project has been the model, and is being expanded to east and south King County.
- Centralized traffic control systems, from one center, can coordinate traffic signals to increase traffic flow. Most of the larger cities in the Puget Sound region are using the system, but it should be expanded.
- Commercial Vehicle Information Systems and Networks (CVISN) – an ITS for commercial vehicles.

TMS/ITS improvements are a major component of any metropolitan transportation plan. The above list is not intended as a comprehensive compilation of all such strategies, but rather a representative sample of what is occurring in some of our urbanized areas. This option suggests that TSM/ITS is an integral part of using the existing transportation infrastructure more efficiently. New, innovative ITS mechanisms are being developed, and this option suggests they should be instituted in Washington, where appropriate, as they become available.

### Arguments in Favor

Traffic System Management and Intelligent Transportation Systems add system capacity without major new infrastructure. They are extremely cost effective and over the long term will provide great benefits.

### Arguments Against

TSM/ITS are primarily for use in developed urbanized areas. They are a modest response when what is needed is more roadway capacity.

### Relationship to Findings

6 This option relates to the following findings:

Finding #12: In Washington state, traffic congestion wastes time and resources worth over \$2 billion dollars each year.

Finding #16: Most regions in North America, including those in Washington, have attempted to address their congestion problems by adopting a multi-faceted approach.

Option A7: To reduce demand on the highway system, Traffic Demand Management (TDM) policies should be used  
TDM policies should include the following:

- Incentives such as expanding the Commute Trip Reduction (CTR) program in the nine CTR counties including restoring, funding, and expanding the Ridesharing Tax Credit program to worksites with fewer than 100 employees, and to high school and college faculty and students,
- Parking strategies including cashing out employer-provided parking if the employee will travel to work other than in a single occupancy vehicle (SOV),
- Trip reduction incentives for jurisdictions, entrepreneurs, and individuals,
- Other strategies including flexible work hours, 4-day work weeks, telecommuting, expansion of park and ride lots, time share automobiles, employer-paid transit passes, and other innovative ideas. 7

### Summary of Discussion

Traffic Demand Management policies are designed to reduce demand on the highway system by removing vehicles, especially during peak driving hours. On average, according to a 1999 CTR Task Force Report, the CTR program removes 18,500 vehicles from the state's roadways every morning – 12,600 in the central Puget Sound region alone. Research shows that a fully occupied bus removes 60 cars from the roadway and a fully occupied van removes 8-10 vehicles from the roadway.

In Washington, the Commute Trip Reduction (CTR) law was incorporated into the Washington Clean Air Act in 1991. The CTR law affects Washington's nine counties with populations over 150,000 – Clark, King, Kitsap, Pierce, Snohomish, Spokane, Thurston, Whatcom, and Yakima. The CTR program goals are to reduce air pollution, traffic congestion, and petroleum consumption through employer-based programs that decrease the number of commute trips made in single occupant vehicles (SOV).

The CTR law applies to worksites with 100 or more full-time employees at a single worksite who begin their scheduled workday between 6 a.m. and 9 a.m. for twelve consecutive months. Employers are expected to meet the following goals for reducing SOV and vehicle miles traveled (VMTs) although employers making a "good faith effort" to achieve the goals are deemed to be in compliance.

1995	15% reduction
1997	20%
1999	25%
2005	35%

The other major component of the CTR program is the rideshare tax credit that reimburses employers for providing subsidies to employees who use alternative commute

modes. Employers receive a credit on their B&O or utility tax up to \$60/year per employee. The credit is capped at \$2.5 million / year statewide; 267 employers took advantage of the credit in 1998.

The CTR Task Force identified other opportunities to increase the CTR law's effectiveness:

- include more worksites in the program (less than 100 employees);
- align local parking policies with CTR goals;
- align land use decisions with CTR goals;
- investments in alternative transportation infrastructure (e.g., park and ride lots, complete the HOV system).

Cashing out employer-provided parking would require employers who offer their employees subsidized parking, would also offer the employee the option of receiving the cash value of the subsidy should they choose not to drive alone to work. Some employers already offer this option and have reduced employee driving as a result.

Flexible work hours, 4-day work weeks, telecommuting, and employer-paid transit passes are all policies in some use in Washington now. This option suggests that these strategies should be encouraged; that using incentives like the tax code to promote their use should be considered. Park and ride lot expansion should be a priority.

## Arguments in Favor

Traffic demand management strategies are designed to reduce demand on the transportation system. TDM investments are cost-effective as they reduce the need for capacity improvements. Most urbanized areas already have TDM programs in place; they should be pursued aggressively to reduce demand wherever possible.

## Arguments Against

TDM policies are social engineering – they are trying to alter people's behavior. People want to drive their automobiles; government and business should simply deal with that reality.

## Relationship to Findings

<sup>7</sup> This option relates to the following findings:

Finding #12: In Washington state, traffic congestion wastes time and resources worth over \$2 billion each year.

Finding #13: Congestion increases vehicle emissions per mile traveled and worsens air pollution

Finding #14: Congestion is a result of many factors, including growing population, increased intensity of vehicle use by the average person, a failure to provide an

appropriate balance between building more roads or significantly expanding transit use and trip reduction programs, and a failure to require drivers to pay the costs they generate when choosing to drive on congested roads.

Finding #16: Most regions in North America, including those in Washington, have attempted to address their congestion problems by adopting a multi-faceted approach.

Finding #17: Park and ride lots encourage carpooling and transit use; many lots in congested corridors are currently full. The success of park and ride lots depends on the frequency of transit service, the travel time and cost advantage to transit and carpool users, and the safety of the park and ride lot, including adequate lighting.

## OPTIONS FOR 20-YEAR INVESTMENTS

Option B1: In order to more specifically address varying transportation needs throughout the state, some state transportation mobility funding should be shared with regions. Grant regions revenue authority to address their high priority needs.

If such a regional option is to work, the following must be done:

- block grant a percentage of state mobility funds to the regions; regions will decide how to spend these funds,
- grant regions ability to seek ballot approval for significant transportation revenue decisions,
- the regions' investment focus should be on transportation corridors, using most effective mix analysis in urban areas,
- transportation and land use planning should be integrated, and
- grant regions authority to use congestion pricing. 8

### Summary of Discussion

This option closely follows Option A1 under the More Efficient Use options, but is focused more toward future investments. A new regional approach to investing – where some existing mobility funds would be directed to the regions to address congestion, and where new regional transportation revenue authority for use in the regions be authorized by the state – is the cornerstone of this option. This option requires that state capacity investments be consistent with local and regional transportation plans and priorities. This approach is being implemented in a number of states and jurisdictions around the country and Canada.

Subsequent options detail elements of this option.

### Arguments in Favor

Regionalizing some state mobility funds will result in more direct accountability for addressing transportation problems. Regional revenue authority permits each region to invest some transportation funding directly approved by voters in the region.

### Arguments Against

Regionalizing some transportation spending will result in 'balkanization' of the state transportation system. Regional revenue authority will result in differing tax burdens throughout the state.

## Relationship to Findings

8 This option relates to the following findings:

Finding #16: Most regions in North America, including those in Washington, have attempted to address their congestion problems by adopting a multi-faceted approach.

Finding #33: Other large metropolitan areas have created regional governments designed to better coordinate and enforce land use and transportation plans.

## Option B2: Use a corridor approach to transportation planning and funding to invest in the most effective mix of strategies in the most heavily-traveled corridors.

Characteristics of this approach include the following:

- performing a corridor analysis for major investments in the most heavily traveled corridors to determine the most effective mix of investments,
- capacity improvements should emphasize alternatives such as transit and rail service, non-motorized options such as bicycling and walking, and ferry capacity as well as increased highway capacity,
- investments decreasing demand for highway use such as adopting smart growth policies, traffic demand management programs, and congestion pricing,
- concentrating on fixing the worst “bottlenecks” and congested areas first,
- using multi-modal criteria to determine the costs and benefits of each alternative,
- seeking public-private partnerships. 9

## Summary of Discussion

The committee repeatedly discussed the need to focus the limited amount of transportation funding so that the most heavily traveled roadways and multimodal routes in the major transportation corridors receive the majority of funding. A transportation “corridor” can be identified based on state and regionally significant destinations. The state has numerous transportation corridors including highway, freight rail, and ferry corridors.

This option says that a corridor analysis should be performed for major investments in the most heavily-traveled corridors to determine the most effective mix of investments. The most effective mix principle says that all transportation strategies (e.g. transit and rail capacity improvements, increased road capacity, non-motorized improvements, smart growth, congestion pricing, TDM and ITS) should be considered when investing in such corridors. The goal is to reduce peak hour delay of people and goods by providing choices. While there is presently no standard analytical approach to determining the most effective mix of modes in a corridor, each region would best know its needs and

what the populace desires in its transportation choices. Examples of a most effective mix analysis include the 1999 Translake (SR520) suggested alternatives, and the Land Use, Transit, and Air Quality (LUTRAQ) analysis conducted recently in Oregon.

The committee believes that new investments should be directed first toward the worst bottlenecks and congested areas. Where appropriate, public – private partnerships should be pursued (the state passenger rail program is a good example).

### Arguments in Favor

Concentrating transportation investments in heavily traveled corridors allocates limited transportation funding into the areas that receive the most use by the public. The most effective mix of strategies will aid in reducing transportation demand while ensuring that all modes will be considered in solutions.

### Arguments Against

The transportation system should be viewed as a whole; concentrating investments in designated corridors will reduce available funding to other parts of the state system.

More roadway capacity is what is needed. Studies show that roadway capacity is failing to keep pace with vehicle miles traveled, and over 80% of journeys to work are made by persons driving alone in their vehicles. Multi-modal investments only make sense in congested urban areas.

### Relationship to Findings

9 This option relates to the following findings:

Finding #8: The most recent state transportation plan estimates that, taken together, all levels of government in Washington have over \$50 billion in unfunded needs/requests over the next twenty years.

Finding #10: State and local governments do not use all of the best tools available for identifying the most cost-effective investments.

Finding#11: Dedicated funding makes it difficult to optimize transportation investments across modes; each mode “gets its share,” regardless of cost-effectiveness.

Finding #14: Congestion is a result of many factors, including growing population, increased intensity of vehicle use by the average person, a failure to provide an appropriate balance between building more roads or significantly expanding transit use and trip reduction programs, and a failure to require drivers to pay the costs they generate when choosing to drive on congested roads.

Finding #16: Most regions in North America, including those in Washington, have attempted to address their congestion problems by adopting a multi-faceted approach.

Finding #24: Because of Washington state’s importance as a freight link to the rest of the world, increasing congestion in urban areas poses a threat to the economic well being of the entire state.



## Option B3: Transportation investment equity can be achieved through the regional approach to investing.

Through the regional approach, funds raised in the regions for transportation improvements should be invested in the region. Future regional investments should include a “large project fund” for large regional and local transportation projects not eligible for funding through the state system. <sup>10</sup>

### Summary of Discussion

This option builds on the ‘regional approach’ and says that transportation revenues raised in the regions should be invested in the regions. There is no specific Finding that discusses the “equity” principle; rather, equity is the logical outgrowth of congestion discussions and how to address it.

The committee was presented with statistics illustrating that most of the large urban counties (King, Snohomish, Pierce, Spokane) are ‘donor’ counties for state gas tax revenues – those counties receive less transportation funding back from the state than they send to the state. This is not an uncommon occurrence around the country for large urban areas; however, recent studies indicate that with the passage of I-695, the discrepancy will widen.

The committee considered this information and suggests that a three-tier approach to the equity issue be used in the future as follows:

<b>Tier 1</b>	<b>What to Invest in</b>	<b>Revenue Source</b>
1	Maintenance Preservation Safety. <ul style="list-style-type: none"><li>▪ All modes</li><li>▪ All jurisdictions</li></ul>	Existing Revenues
2	Statewide Priority Corridors	Statewide Revenue Source <ul style="list-style-type: none"><li>▪ Flexible</li></ul>
3	Regional Priority Corridors Local Priority Corridors	Regional Revenue Source Local Revenue Source <ul style="list-style-type: none"><li>▪ Regional Equity</li><li>▪ Possibly flow from mobility funds</li></ul>

The committee concluded that the current system of allocating transportation revenues around the state will not adequately address transportation funding needs in the urban counties with the most acute congestion problems. The regional investment principle addresses that concern.

### Arguments in Favor

This approach will allow the most congested regions of the state to tax their citizens for transportation improvements to be made in the region. The option answers the concern that the most congested regions will never receive enough funding from the state process to adequately address their transportation needs.

### Arguments Against

This option will result in differing tax rates around the state; there will be many administrative challenges in collecting differing tax rates. Parts of the state will not have the electorate's support to raise regional taxes and will suffer as a result.

### Relationship to Findings

10 This option relates to Finding #33: Other large metropolitan areas have created regional governments designed to better coordinate and enforce land use and transportation plans.

## Option B4: Future transportation investments should strengthen the link between transportation and land use planning.

Characteristics of this link include the following policies:

- transportation infrastructure should meet GMA concurrency requirements,
- eliminate regulatory barriers to pedestrian and transit-friendly development (“smart growth”) while ensuring high environmental and design standards,
- ensure that major transportation investments are consistent with regional and local GMA land use and transportation plans,
- jurisdictions should incentivize “smart growth” with the goal of creating more compact developments that require less auto-oriented transportation systems,
- jurisdictions should work with the private sector to build more affordable housing with the goal of creating more urbanized housing to reduce vehicle miles traveled (VMTs),
- the inclusion of land use alternatives should become standard practice when conducting corridor studies. 11

### Summary of Discussion

GMA requires that local jurisdictions prohibit development that would cause the level of service on a local transportation facility to decline below the standards adopted in the transportation element of the local comprehensive plan. However, local governments can approve such projects if transportation improvements, or strategies to accommodate the development impacts, occur concurrently with the development itself. This is the GMA concurrency requirement, sometimes described as a “pay as you grow” principle. Concurrency links land use and transportation plans by requiring that roads and other public services will be sufficient to support new development.

In practice, however, many areas lack the facilities to support existing development; research shows that King County alone, contains 68 ‘zones’ out of compliance with present concurrency standards. This option suggests that meeting concurrency

requirements for transportation infrastructure must be a priority if the transportation system is to work.

An emerging trend in planning and urban design focuses on changing the conventional suburban pattern of roads and land uses. These planning models are known as new urbanism, pedestrian-oriented development, transit-oriented development, neo-traditional neighborhood design, and smart growth. The term ‘smart growth’ can be defined as compact, mixed-use, pedestrian-friendly developments intended to reduce the need for car travel for everyday activities.

This option suggests that jurisdictions should “incentivize” smart growth developments by:

- offering tax incentives to developers (e.g., eliminating sales taxes on materials and construction) who build “smart growth” communities,
- making grants to municipalities that eliminate barriers to “smart growth” through amending their municipal zoning codes,
- making grants to municipalities to develop “smart growth” plans,
- offering tax incentives to mortgage companies who offer “location efficient mortgages.”

In-city affordable housing will reduce vehicle miles traveled (VMTs) that in turn will reduce congestion and improve air quality. This option suggests that governments use incentives (sales tax breaks, suspension of property tax for a number of years) to urge housing developers to build more urban affordable housing.

The option also suggests that WSDOT and local governments be directed to include land use alternatives when conducting corridor studies (see most effective mix discussion).

### Arguments in Favor

Linking land use and transportation is a sensible solution, especially in an area like the central Puget Sound region, where available land is limited. Smart growth developments have been successful elsewhere in the country and over time, will reduce vehicle miles traveled.

### Arguments Against

Many people want to live outside the central city and drive their autos to work. An effort to force them into more compact living arrangements in cities will not work.

### Relationship to Findings

11 This option relates to the following findings:

Finding #3: The high quality of life in Washington is based to a great extent on the value of our environment. Protecting our natural resources is essential to our future, and environmental issues will strongly influence the delivery and cost of transportation projects in the future.

Finding #32: While the state's Growth Management Act (GMA) has improved the coordination of land use and transportation, opportunities remain to strengthen the linkage to achieve land use goals.

Finding #33: Other large metropolitan areas have created regional governments designed to better coordinate and enforce land use and transportation plans.

Finding #34: New development over the last fifty years has tended toward low-density suburbs with a heavy reliance on autos.

Finding #35: Recent demographic changes indicate increased demand for more compact developments that require less auto-oriented transportation systems.

Finding #36: Federal TEA-21 encourages land use alternatives when conducting corridor studies, but such analyses are currently rare. WSDOT could work with local governments to incorporate land use alternatives as standard practice when conducting corridor studies.

Option B5: To provide for a more efficient flow of traffic in congested areas, Transportation System Management (TSM) and Intelligent Transportation Systems (ITS) policies, should be implemented where effective.

Policies should include the following:

- Traffic and incident management, such as freeway on-ramp metering, signalization improvement, intersection modification, and priority treatment for HOV's and/or transit vehicles.
- Traveler information including electronic signs, sharing of information by DOT, and transmission to the public through radio and television. 12

### Summary of Discussion

This option repeats Option A6 as a 20-year investment. As in Option B6 below, investing in Traffic System Management (TSM) and Intelligent Transportation Systems (ITS) is an inexpensive method to improve transportation mobility in Washington.

TSM and ITS improvements are designed to add capacity without requiring major new infrastructure improvements (see Option A6 for a discussion of TSM and ITS). ITS improvements are a major component of any metropolitan transportation plan; they take advantage of emerging transportation technology to better manage the existing infrastructure. Investing in TSM/ITS is intended primarily to assist in the most heavily congested areas; as such, it is a good regional investment.

### Arguments in Favor

Traffic System Management and Intelligent Transportation Systems add system capacity without investing in major new infrastructure. ITS is extremely cost effective, designed for use in the most heavily congested areas.

## Arguments Against

TSM/ITS is a modest response and does not address needed roadway capacity.

## Relationship to Findings

12 This option relates to the following findings:

Finding #12: In Washington state, traffic congestion wastes time and resources worth over \$2 billion each year.

Finding #16: Most regions in North America, including those in Washington, have attempted to address their congestion problems by adopting a multi-faceted approach.

Option B6: To reduce demand on the highway system, Traffic Demand Management (TDM) policies should be used.

TDM policies should include the following:

- Incentives such as expanding the Commute Trip Reduction (CTR) program in the nine CTR counties including restoring, funding, and expanding the Ridesharing Tax Credit program to worksites with fewer than 100 employees, and to high school and college faculty and students,
- Parking strategies including cashing out employer-provided parking if the employee will travel to work other than in a single occupancy vehicle (SOV),
- Trip reduction incentives for jurisdictions, entrepreneurs, and individuals,
- Other strategies including flexible work hours, 4-day work weeks, telecommuting, expansion of park and ride lots, automobile time-sharing, employer-paid transit passes, and other innovative ideas 13

## Summary of Discussion

This option repeats Option A7 as a 20-year investment. TDM is both a more efficient use of the system and a 20-year investment priority. From the beginning of its deliberations, the committee discussed the two sides of addressing the congestion issue: supply and demand. Traffic Demand Management (TDM) represents the demand side of the equation, and is designed to reduce demand on the highway system by removing vehicles, especially during peak driving hours.

The committee found that investment in TDM policies is an inexpensive method to reduce highway driving. Many of the policies listed in this option are in use throughout Washington. This option says that TDM policies should be used much more aggressively than is currently the practice. For example, the rideshare tax credit described in Option A7 should be restored and then expanded to smaller employers and the \$2.5 million annual cap could be expanded over time to a much larger investment.

This option suggests that adding to, or building new park-and ride lots should be a priority. The state's Highway System Plan lists numerous park-and-ride lot projects over the next 20-years, but few are funded. Park-and-ride lot completion should become a high priority. Other innovative ideas, like automobile time-sharing should be encouraged and promoted.

### Arguments in Favor

There must be a well-funded demand side reduction to the congestion equation. TDM policies are an inexpensive method to reduce the demand to drive alone.

### Arguments Against

TDM policies are social engineering. People want to drive their automobiles; government and business should simply deal with that reality.

### Relationship to Findings

13 This option relates to the following findings:

Finding#12: In Washington state, traffic congestion wastes time and resources worth over \$2 billion dollars each year.

Finding#13: Congestion increases vehicle emissions per mile traveled and worsens air quality.

Finding#14: Congestion is a result of many factors, including growing population, increased intensity of vehicle use by the average person, a failure to provide an appropriate balance between building more roads and significantly expanding transit use and trip reduction programs, and a failure to require drivers to pay the costs they generate when choosing to drive on congested roads.

Finding#16: Most regions in North America, including those in Washington, have attempted to address their congestion problems by adopting a multi-faceted approach.

Finding #17: Park and ride lots encourage carpooling and transit use; many lots in congested corridors are currently full. The success of park and ride lots depends on the frequency of transit service, the travel time and cost advantage to transit and carpool users, and the safety of the park and ride lot, including adequate lighting.

Option B7: Authorize congestion pricing, such as tolls, for use on congested facilities in urban areas. 14

### Summary of Discussion

While this option is mainly the purview of the Revenue Committee options, the Investment Strategies Committee spent a good deal of time on congestion and its causes, and the remedies to address it.

The committee's issue paper, *Traffic Congestion in Washington*, defines congestion as "...an excess travel time or delay due to traffic interference above an agreed to norm."

Without good information about the costs they impose on others, drivers tend to overuse roads, causing congestion. Congestion pricing seeks to make drivers using a road or bridge pay a fee for the cost of the delay they impose on others during peak hours of use. Rather than make all users pay for road use regardless of when and where they travel (as the gas tax does), congestion pricing allocates costs to the users of a specific facility at a particular time of day.

Many transportation planners and economists favor congestion pricing, but it has received little support to date among the general populace. The first "priced" highways are just now beginning to be used in other parts of the U.S. so results are sketchy. This option suggests that pricing strategies should be authorized in urban areas and local and regional decision-makers can decide if pricing makes sense on a given roadway. Road pricing would be a decision for the 'regions' if the state adopts the regional model option.

### Arguments in Favor

There is a greater likelihood that congestion pricing will keep traffic free-flowing, since tolls can be raised to a level to beyond which many will be willing to pay – thus reducing congestion. It is an immediate remedy that will reduce congestion in urban areas. The decision to use congestion pricing would be a regional or local decision; thus only the most congested areas would consider it.

### Arguments Against

The populace has already paid for the highway system through gas taxes and automobile licensing fees. Congestion pricing would force lower income drivers off the highways at peak hours, or at least onto adjacent streets, thus causing a peak hours' elite whom could afford to pay the tolls. People have already made long term decisions about where to live based on the current transportation price structure. Congestion pricing would upset that balance.

### Relationship to Findings

14 This option relates to the following findings:

Finding #12: In Washington state, traffic congestion wastes time and resources worth over \$2 billion each year.

Finding#14: Congestion is a result of many factors, including growing population, increased intensity of vehicle use by the average person, a failure to provide an appropriate balance between building more roads or significantly expanding transit use and trip reduction programs, and a failure to require drivers to pay the costs they generate when choosing to drive on congested roads.

Finding #16: Most regions in North America, including those in Washington, have attempted to address their congestion problems by adopting a multi-faceted approach.

Option B8: Future transportation investments should recognize the human resources necessary to supply the technical workforce capable of maintaining, preserving, and improving the transportation system.

State, local, and regional transportation authorities are encouraged to form partnerships with labor to develop apprenticeships and training programs to insure the availability of a skilled transportation workforce. Resources including funding and incentives should be provided to:

- establish technical apprenticeship opportunities specific to the needs of transportation,
- enhance skills of the existing technical workforce in transportation – related classifications,
- create incentives for professional development opportunities, including reimbursement for engineers and other transportation professions requiring degrees,
- establish a “human resource skills bank” of transportation professionals, and in conjunction with labor develop a program allowing state, local, and regional transportation authorities to draw from the skills bank during periods of need,
- create opportunities for cross-training as incentives for promotional opportunities, skill enhancements, and morale building. 15

### **Summary of Discussion**

This option recognizes that an investment in human resources is an essential part of a 20-year transportation package. It recognizes that transportation has become a discipline requiring a skilled workforce and as transportation challenges become more complex, the need for the skilled workforce will only intensify.

The option suggests that partnerships be established to ensure that the skilled workforce is in place for the next 20 years.

### **Arguments in Favor**

A skilled workforce is essential to dealing with transportation issues presently and in the future. An investment in human resources is a wise investment and should be included in the recommendations of this committee.

### **Arguments Against**

Skilled transportation professionals will continue to be produced through market forces.

### **Relationship to Findings**

15 This option relates to the following Finding:

Finding #10: State and local governments do not use all of the best tools available for identifying the most cost-effective investments.